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I, JANENE PEISKER, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2004901482 for a patent by LANSTAR CORPORATION PTY LTD as filed on 19 March 2004.



WITNESS my hand this
Thirty-first day of March 2005

A handwritten signature in black ink, appearing to read 'J.K.+U'.

JANENE PEISKER
TEAM LEADER EXAMINATION
SUPPORT AND SALES

Provisional Specification

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Invention Title

METHOD AND SYSTEM FOR TEACHING
SPOKEN ENGLISH

The invention is described in the following statement:

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LANSTAR CORPORATION LTD

19/3/04

Name of Applicant(s)

Date

METHOD AND SYSTEM FOR TEACHING SPOKEN ENGLISH

Technical field

This invention relates to a method for teaching students how to speak English and more particularly to a computer based learning system which incorporates the method together with a model speaker and practice and testing routines which allow a student to learn in their own time.

10 Background of the invention

Traditionally, teaching English as a second language has been carried out in a class room situation with a teacher demonstrating the pronunciation of the various combination of letters and words and with students repeating these sounds usually as a group. This emersion technique has been supplemented by a variety of additions including colour coding and other phonetic systems, video demonstrations and computer based reading exercises.

The advent of computer programs which enunciate words and phrases when entered via a keyboard, usually referred to as speech synthesizers eg see US Patent 4,121, 051 to Place (1978) has not been successful in the teaching of spoken English, since the synthesized speech is stilted and machine like. PCT application WO 00/60560 in the name O'Connor, discloses a method of converting plain English text to a number of levels of enriched text each of which incorporates progressively

more clues to the pronunciation of the words of the text. The clues include colors, shapes, graphs and markers which tend to complicate rather than simplify the learning process.

5 **Object of the Invention**

It is an object of this invention to provide a system which simplifies the teaching of spoken English and allows a student to learn to speak English faster with the aid of a personal computer. It is a further object to overcome the drawbacks of the prior art.

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Summary of the invention

In one form, the invention comprises a phonetic method of identifying twenty three vowel sounds and twenty seven consonant sounds in spoken English, assigning a colour code to distinguish vowel sounds from consonants and both from silent letters and assigning a numerical code to the vowel sounds.

15 In another form, the invention provides a computer based learning system including an audio visual screen inset of a model speaker who pronounces syllables, words and sentences on command. In a further form the invention provides a record and play back function for the 20 student to test their own pronunciation against that of the model speaker.

In yet another form, the invention provides a converter program which converts plain English text into the enriched text of the above phonetic method utilising a library data base of coloured and numerically

coded words. An additional feature of this form is a search engine which finds all the words in the library having a requested combination of vowel and consonant sounds. And in a further form, the invention provides an engine which analyses the frequency of words used in a submitted text and thereby allows a student to practice the most frequently occurring words.

Brief description of the drawings

In order to assist with the understanding of the invention preferred embodiments will be described with reference to the following figures.

10 FIG 1 is a generic screen shot showing a colour and numerically coded sentence, the model speaker video inset, tables of vowels and consonants and reading exercises;

15 FIG 2 and 3 are respectively lists of words with the same vowel sound showing a variety of spellings of each sound, and lists of words with the same letters but pronounced differently;

FIG 4 and 5 are tables showing the scope and sequence of lessons which teach the subject phonetic method

20 FIG 6 is a flow diagram illustrating the programming for activating the video inset of FIG 1;

FIG 7 is a screen shot of a matrix showing consonant blends;

FIG 8 is a screen shot showing the conversion of a plain text sentence into enriched text stored in a library database;

25 FIG 9 is a screen shot of a search engine which finds all the words in the library database having a requested combination of vowel and consonant

sounds;

FIG 10 is a flow diagram illustrating the programming of the converter required for the conversion in FIG 8;

FIG 11 shows flow diagrams of subroutines A, B, C and D of FIG 10;

- 5 FIG 12 is a flow diagram illustrating an engine which analyses the frequency of words in a given text;

Detailed description of the preferred embodiment

The invention will now be described with reference to a number of exemplary embodiments. It is to be understood that the invention is not limited to these embodiments alone and other alternative embodiments may be envisaged without departing from the spirit and scope of the invention.

10 FIG 2 gives lists of words containing vowel sounds 2, 5, 7, 14, 15, and 20 with examples of the variety of spellings of each sound all of which have the same pronunciation. For example vowel sound 2 occurs in the following words spelt with "e", "a", "u", "ai", "ea", "ei" and "ie" respectively:

leg, any, bury, again, head, leisure and friend.

15 FIG 3 gives lists of words with the same letter(s) which are however pronounced differently. For example the letter "a" is pronounced in nine different ways in the following words:

cat, any, sausage, watch, comma, cake, ahead, talk, and father

These lists clearly demonstrate that the English language is not phonetic and this is the main reason why speakers of other languages find it so

confusing. All words in the list are rendered in the preferred enriched text of the phonetic method of the present invention viz. consonants are blue, silent letters are grey and vowels are red and carry a superscript from 1 to 23 which identifies the unique vowel sound irrespective of its spelling.

5 The 27 consonants are defined in accordance with the International Phonetic Alphabet and where ever the sound of a consonant varies from its normal pronunciation the correct consonant sound appears as a blue letter superscript eg the blue "zh" above the "s" in the word leisure in FIG 2. When two consonants are sounded together in one syllable the latter is
10 underlined eg "ch" in watch in FIG 3, and a dot break is used to indicate the separation of syllables in a word eg the word sausage in FIG 3.
Accordingly, the enriched text of the phonetic method of the present
invention provides an unambiguous and complete rendering of the
pronunciation of English words. In notes which accompany each lesson,
15 conventional rules for pronunciation are discussed but these invariably
have exceptions which make the coding of the present phonetic method a
simpler and faster learning technique.

The generic screen shot of FIG 1 illustrates how the method is incorporated into a computer based learning system. An enriched text sentence appears at the top left section of the screen, the inset of a video of the model speaker at the top right, tables of the 23 unique vowel sounds and 27 unique consonant sounds at the lower right, and practice exercises at the lower left section. The student can click on any of the

vowel and consonant sounds in the tables and a video clip of the model speaker appears in the inset and gives the correct pronunciation.

The student can also click on one of the "letter", "syllable", "word" and "sentence" buttons at the top left and then on the desired part of the coded sentence to hear the model speak a letter, syllable, word or whole sentence respectively. For example if the student clicks on the "syllable" button and then "ou" in the word "countries", the model speaker appears and pronounces vowel sound 5. By clicking on the "decode" button in the same tool bar, the sentence is rendered in plain text for the student to practice without the assistance of the coding.

The "record", "play" and "stop" buttons below the video inset allow the student to record a video of their own pronunciation via a computercam and play it back in the video inset to compare their speech with that of the model speaker. FIG 6 is a flow chart showing the programming logic behind the activation of video clips of the model speaker and of the student's speech recorded via a computercam.

FIG 4 and 5 are tables which give the sequence and scope of a series of lessons which introduce the student progressively to the sound of vowels, consonants, consonant digraphs (combinations of consonants viz sh, ch, th, ng, ph and ck), double letter vowels (ee,oo) and consonant blends. The latter are listed in the screen shot of FIG 7 which gives a matrix listing all the consonant blends. Once again the student can activate the model speaker to pronounce these sounds by clicking on a

particular blend and can test their own pronunciation by means of the computercam.

FIG 8 is a screen shot illustrating how a sentence typed in plain text is converted to the enriched coded text of the present phonetic method with either Australian, British or American standard pronunciation. The plain text is typed in the main section and the enriched text appears in the inset when the options appearing in the tool bar of the former are set and the "colour it" button is clicked. FIG 10 is a flow diagram giving the programme logic of the converter operating to produce the screen shot of FIG 9 and FIG 11 gives subroutines A, B, C and D of FIG 10.

The final feature of this exemplary computer based learning method of the present invention is an engine which analyses the frequency of words used in a text of particular interest eg legal or engineering, to enable the student to practice the vocabulary of interest. The text is scanned into the analysis engine which generates a list of all words with their frequency starting with the most frequent. FIG 12 is a flow diagram of the analysis engine which gives the program logic to the analysis of the vocabulary in the scanned text.

The invention has been described with reference to a particular computer based learning method, however it should be noted that other embodiments which might be achieved with different programming of the functionality of the method fall within the scope and spirit of the invention.

Claims

1. A system for teaching spoken English using a phonetic method of identifying 23 unique vowel sounds and assigning the same number to each vowel sound where ever it occurs irrespective of its spelling.
5. 2. The system of claim 1 which also uses a phonetic method of identifying 27 unique consonant sounds, and assigning the same letter or letters to each consonant sound where ever it occurs irrespective of its spelling.
10. 3. The system of claim 2 in which a colour code is used to distinguish vowel sounds from consonant sounds and both from letters which are not sounded.
15. 4. A computer based learning system including an audio visual screen inset of a model speaker who pronounces syllables, words and sentences on command.
5. 5. The system of claim 4 which includes a record and play back function for a student to test their own pronunciation against that of the model speaker.
20. 6. The system of claim 4 which converts plain English text into the enriched text of the phonetic method of claims 1 to 3 utilising a library data base of enriched text words.
7. 7. The system of claim 6 including a search engine which finds all the words in the library data base having a requested combination of vowel and consonant sounds.

10

8. The system of claim 4 including an engine which analyses the frequency of words used in a submitted text to produce a list of the most frequently occurring words.

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15

20

DEMO Unit 5
Unit Appendix

Letter	Syllable	Word	Sentence	Decode
0 2	3	2 7	5	7 Z 3
8 2	14	2	10	15
13 13	9			
18 1 1	18 z 7	7	16 1	3 8 3

Ther ar many countries in
the world, som ar small
and som ar big.

READING SENTENCES CONTAINING MONOSYLLABIC WORDS IN COLOUR CODE *eg*

13 13 9

How can black cows eat green grass and give white milk?

Now try reading the following paragraph;

Rec | Play | Stop

Videos | Quiz | References

Vowels

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18		
19	20	21	22	23					

Consonants

b	k	s	d	f	g	i	h	l	m
n	p	q	r	t	v	w	y	z	sh
ch	th	th	ng	zh	wh	x			

R:\demo-bin-1.21\vids\v03.avi

FIG 1

Vowel Sound		Words with same sound spelt differently											
2	leg	any	bur-y	a-gain	head	lei-sure	friend						
5	sun	come	bus	or-der (Aust)	doc-tor (Aust)	cap-ture (Aust)	blood	touch	Caesar				
7	tree	a-ny	po-lice	mo-ney	Cae-sar	quay	beach	sheik	peo-p le	be-lieve			
14	bird	fern	word	fur	myr-t le	earth	jourNEY						
15	port	talk	wart	sword	jaw	Au-gust	bought	board	floor				
20	beer	here	i-dea	pia-nist	spear	weird	theor-y	pierce					

FIG 2

Letter(s)		Words with same letter(s) pronounced differently											
a	cat	a-ny	sau-age	watch	com-ma	cake	a-head	talk	fa-ther (Aust)				
o	dog	come	nose	wo-man	un-do	doctor (Aust)							
ai	plaid	a-gain	train	ailse									
ie	friend	be-lieve	pie	view									
ou	touch	shoul-der (Aust)	could	soup	bought	cloud							

FIG 3

Scope and Sequence of Phonics Module

Stage 1

Lesson	Consonants in Lesson	Vowels in Lesson	Cumulative Consonants Covered	Cumulative Vc Covered
1	B	A - Sounds 1&6	B	1,6
2	C sounds K&S, D		B,C,D,S	1,6
3	F	E - Sounds 2&7	B,C,D,F,S	1,2,6,7
4	G sounds G&J, H		B,C,D,F,G,H,J,S	1,2,6,7
5		I - Sounds 3&8	B,C,D,F,G,H,J,S	1,2,3,6,7,8
6	J, K, L		B,C,D,F,G,H,J,K,L,S	1,2,3,6,7,8
7	M, N, P		B,C,D,F,G,H,J,K,L,M,N,P,S	1,2,3,6,7,8
8	R	O - Sounds 4&9	B,C,D,F,G,H,J,K,L,M,N,P,R,S	1,2,3,4,6,7,8,9
9	S Sounds S&Z, T		B,C,D,F,G,H,J,K,L,M,N,P,R,S,T,Z	1,2,3,4,6,7,8,9
10	V	U - Sounds 5&10	B,C,D,F,G,H,J,K,L,M,N,P,R,S,T,V,Z	1,2,3,4,5,6,7,8,9,10
11	W, X, Q		B,C,D,F,G,H,J,K,L,M,N,P,Q,R,S,T,V,W, X,Z	1,2,3,4,5,6,7,8,9,10
12	Y, Z		B,C,D,F,G,H,J,K,L,M,N,P,Q,R,S,T,V,W, X,Y,Z	1,2,3,4,5,6,7,8,9,10
13		Y - Sounds 7&8	B,C,D,F,G,H,J,K,L,M,N,P,Q,R,S,T,V,W, X,Y,Z	1,2,3,4,5,6,7,8,9,10

FIG 4

Stage 2

	Consonant Digraphs sh, ch*2	B,C,D,F,G,H,J,K,L,M,N,P,Q,R,S,T,V,W, X,Y,Z,SH,CH	1,2,3,4,5,6,7,8,9,10
14	th*2, ng	B,C,D,F,G,H,J,K,L,M,N,P,Q,R,S,T,V,W, X,Y,Z,SH,CH,TH,NG	1,2,3,4,5,6,7,8,9,10
15	ph, ck	B,C,D,F,G,H,J,K,L,M,N,P,Q,R,S,T,V,W, X,Y,Z,SH,CH,TH,NG,PH,CK	1,2,3,4,5,6,7,8,9,10
16	ee - Sound 7 co - Sounds 11&12	B,C,D,F,G,H,J,K,L,M,N,P,Q,R,S,T,V,W, X,Y,Z,SH,CH,TH,NG,PH,CK	1,2,3,4,5,6,7,8,9,10,11
17	Sound 13 er/ir/or/ur/ear - Sound 14	B,C,D,F,G,H,J,K,L,M,N,P,Q,R,S,T,V,W, X,Y,Z,SH,CH,TH,NG,PH,CK	1,2,3,4,5,6,7,8,9,10,11
18	aw/au/or/ore/a - Sound 15 ar/a - Sound 16 oi/oy - Sound 17 ow/ou - Sound 18	B,C,D,F,G,H,J,K,L,M,N,P,Q,R,S,T,V,W, X,Y,Z,SH,CH,TH,NG,PH,CK	1,2,3,4,5,6,7,8,9,10,11, 16
19	ar/are/air - Sound 19 eer/ear - Sound 20	B,C,D,F,G,H,J,K,L,M,N,P,Q,R,S,T,V,W, X,Y,Z,SH,CH,TH,NG,PH,CK	1,2,3,4,5,6,7,8,9,10,11, 16,17,18
20	ire/ier - Sound 21 ure/ewer - Sound 22 cur/owr - Sound 23	B,C,D,F,G,H,J,K,L,M,N,P,Q,R,S,T,V,W, X,Y,Z,SH,CH,TH,NG,PH,CK	1,2,3,4,5,6,7,8,9,10,11, 16,17,18
21	scecial sounds	el/e & similar endings 3*ed ending sounds	1,2,3,4,5,6,7,8,9,10,11, 16,17,18,19,20,21,22,23
22	initial consonant blends		
23	final consonant blends		
24	zh		
25	initial consonant blends and vowels		
26			

FIG 5

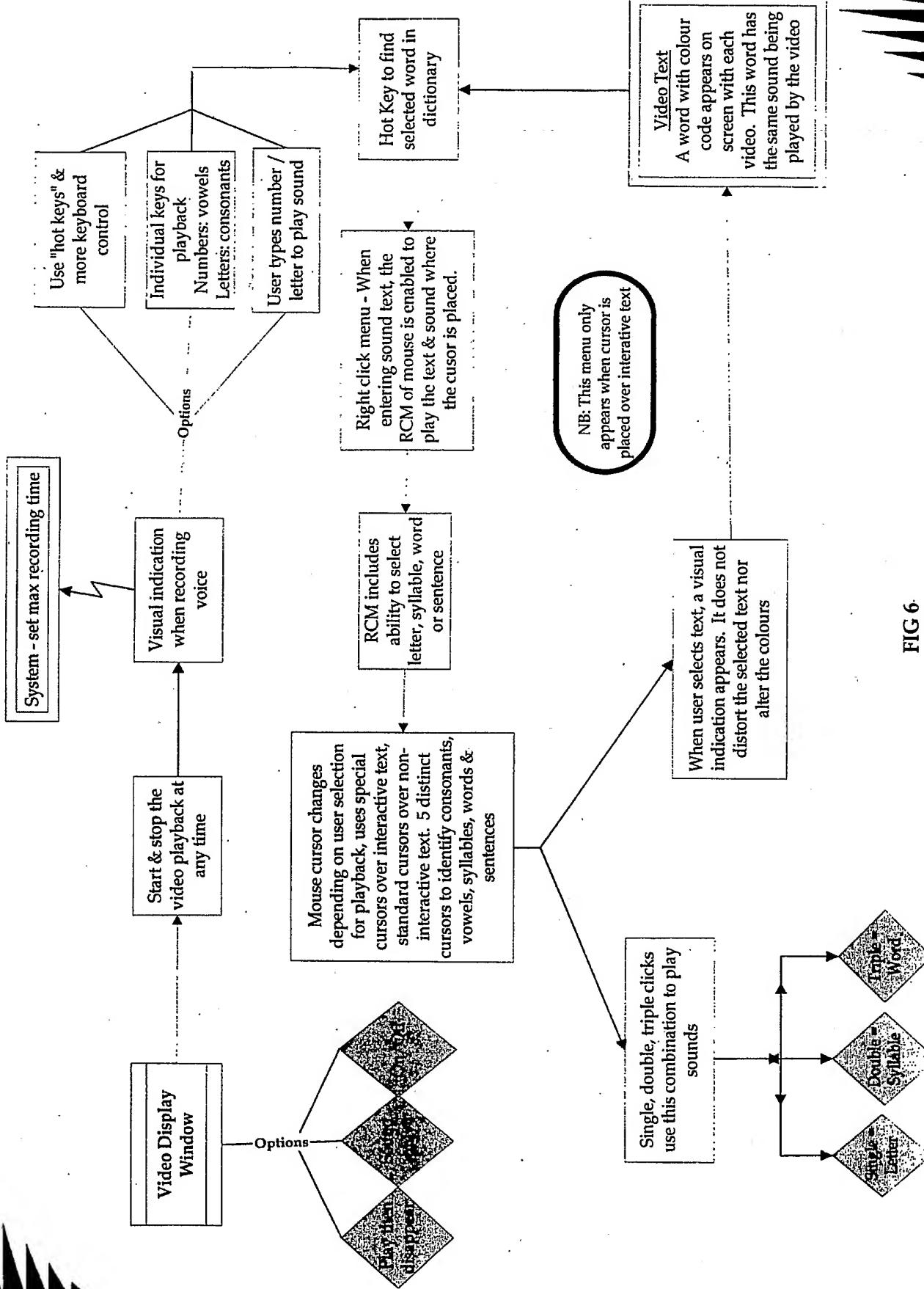


FIG 6.

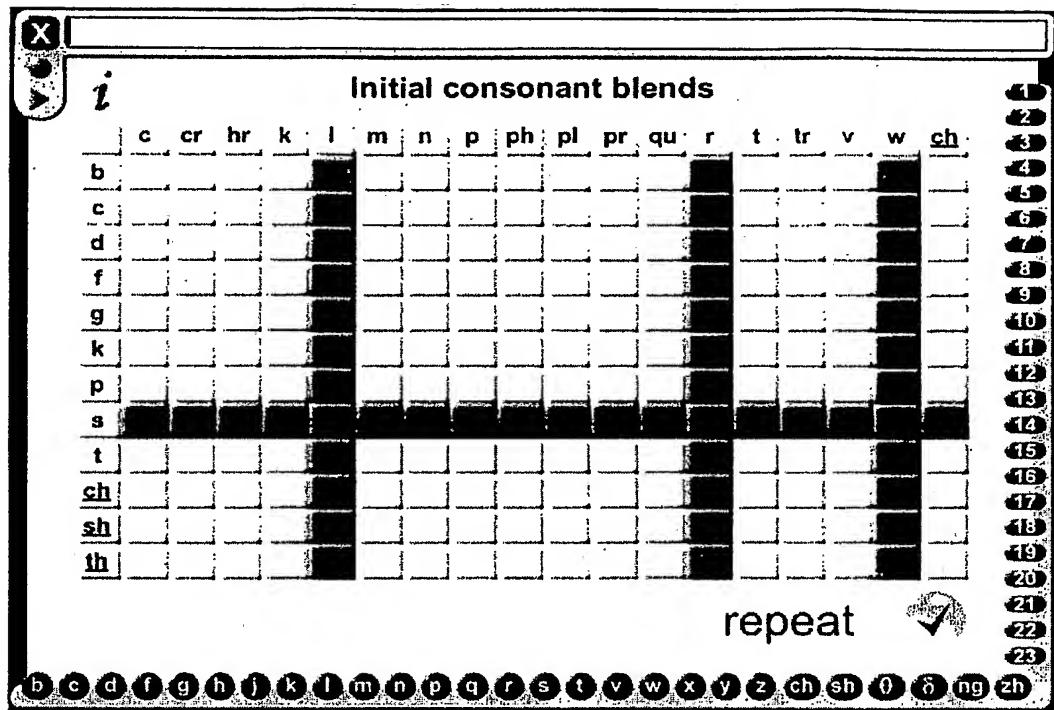


FIG. 7

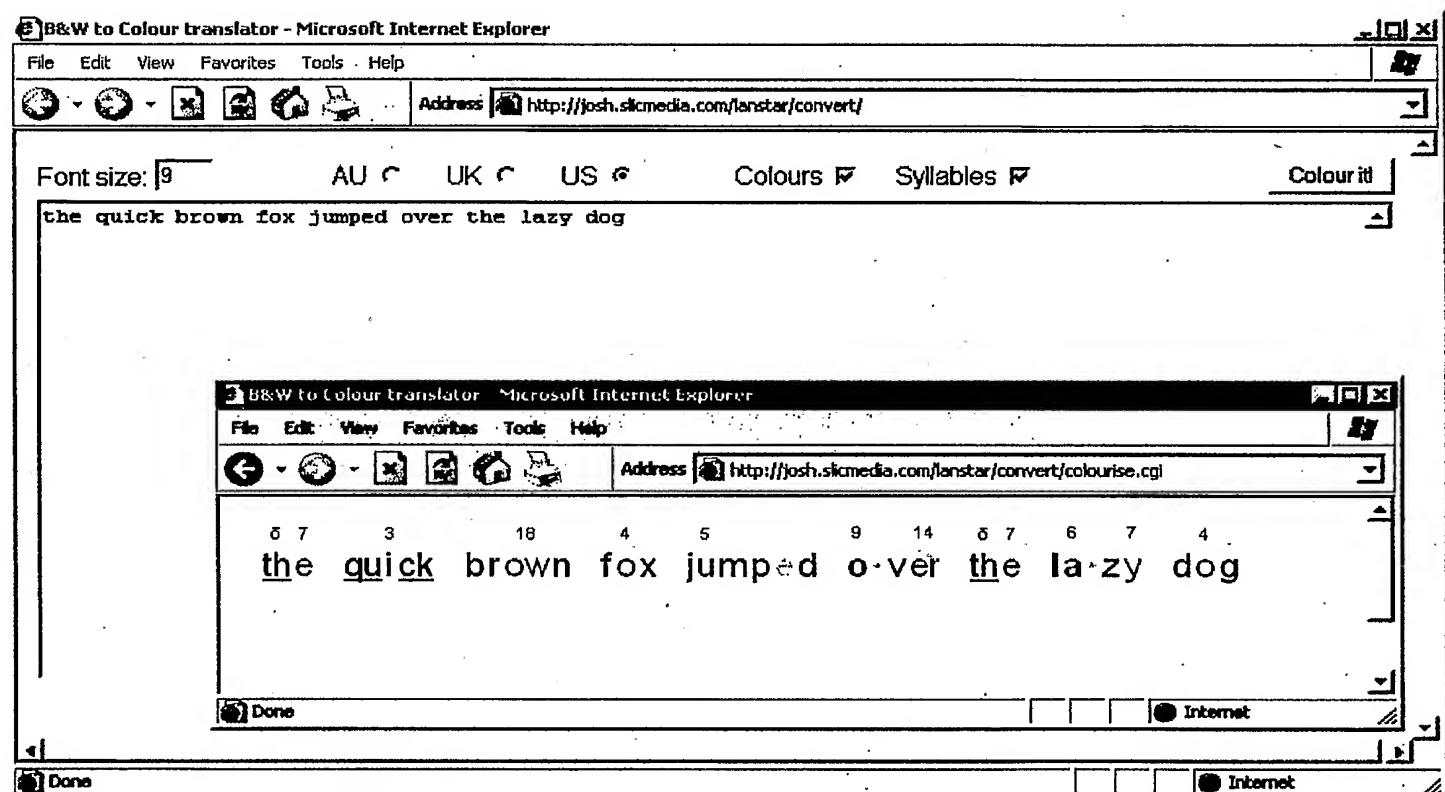


FIG 8

SHOW QUERY

Anything (*)

Anything (*)

Anything (*)

Anything (*)

Anything (*)

BB(B)

Simplified regex: 2 m p

Perl regex: $(^2\b)[^\b]*?(m\b|\b^m\b)[^\b]*?(p\b|\b^p\b)$

9 matches

13 2
at•tempt

13 2 3
at•temp•ted

13 2 3
at•temp•ting

13 2
at•tempts

13 2
con•tempt

2 7
emp•ty

3 g z 2 3
ex• emp•ted

3 g z 2 sh 13
ex• emp•tion

3 ? sh 13
re•demp•tion

FIG 9

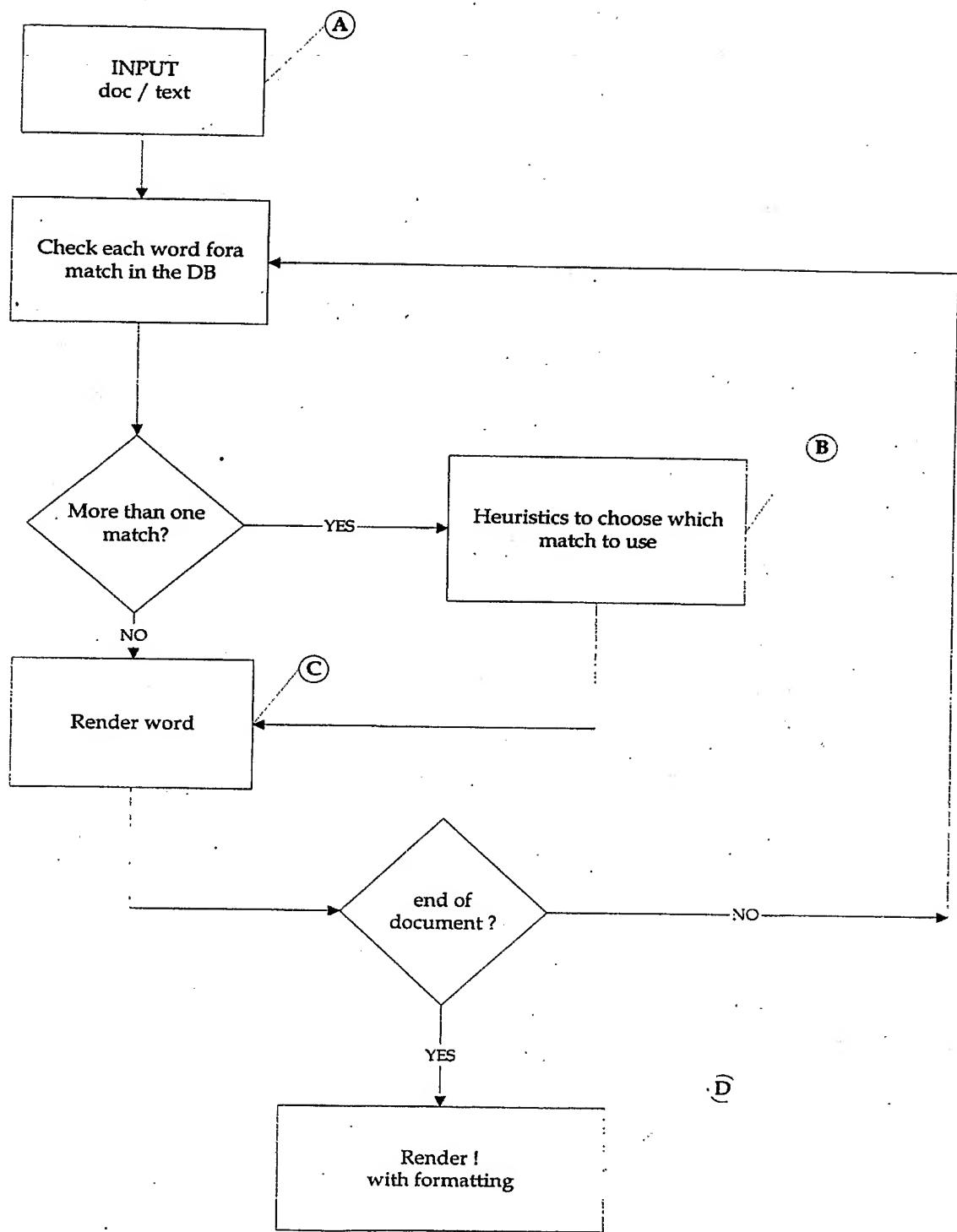


FIG 10

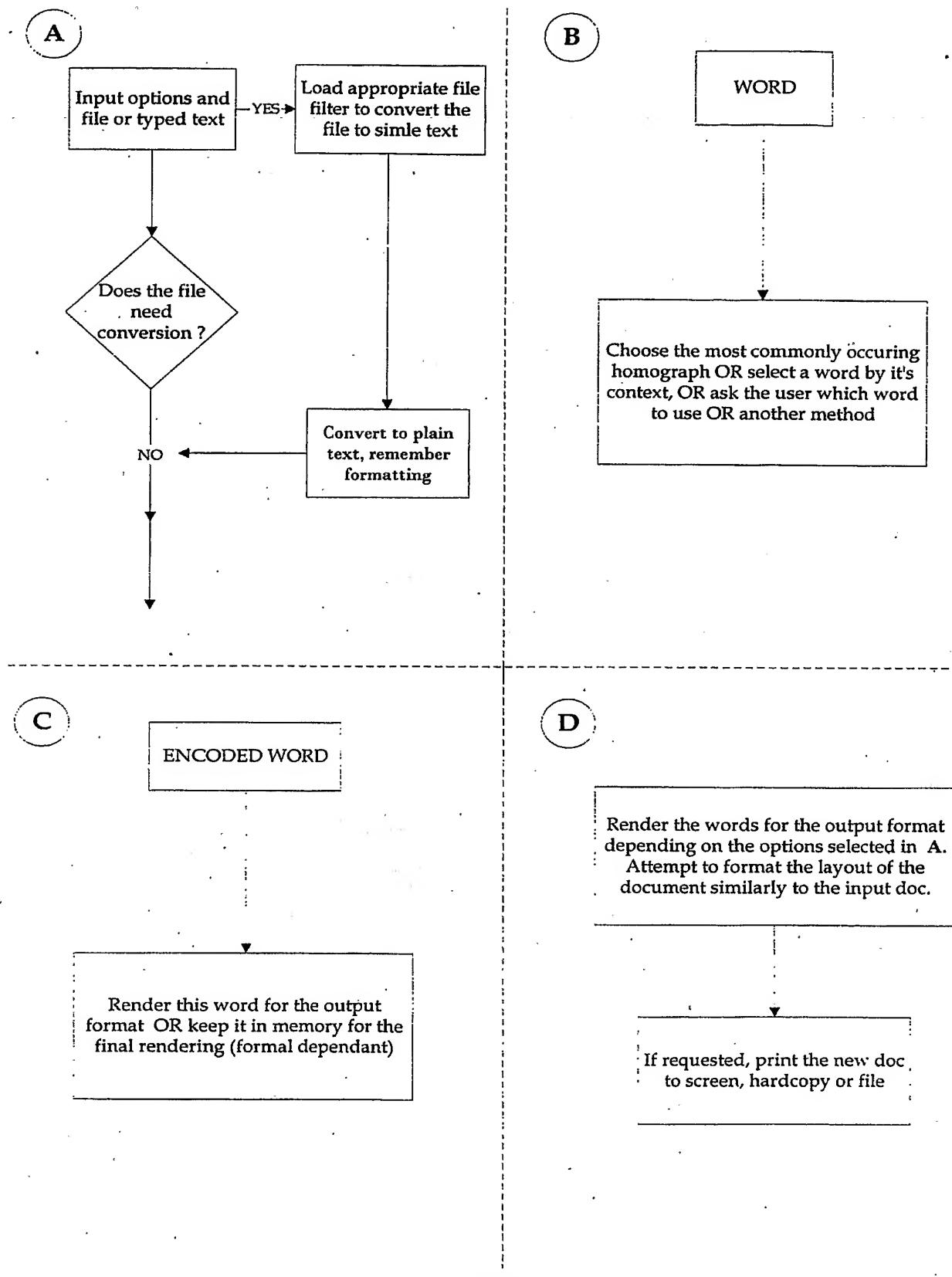


FIG 11

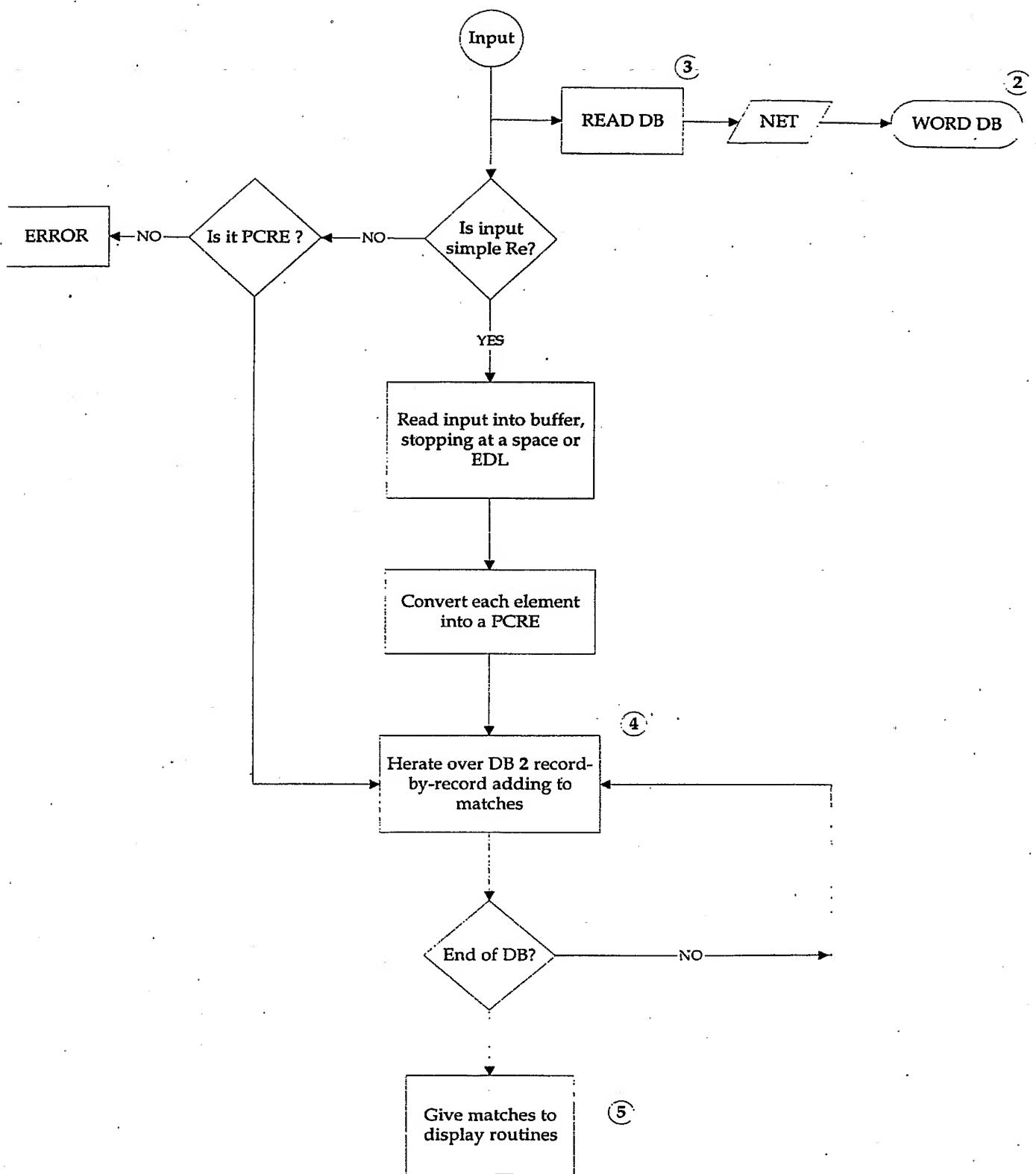


FIG 12